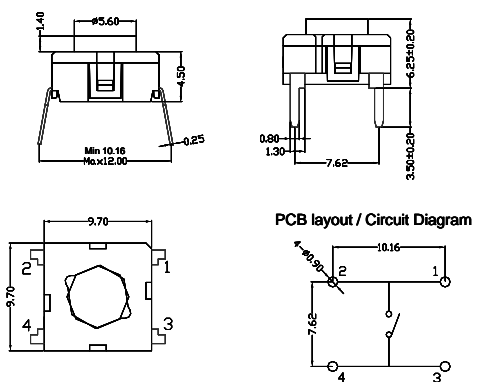
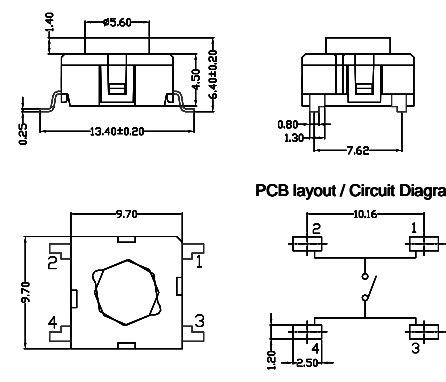
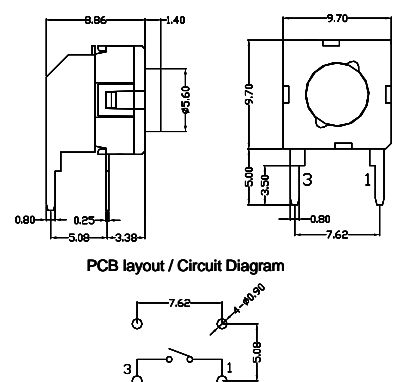
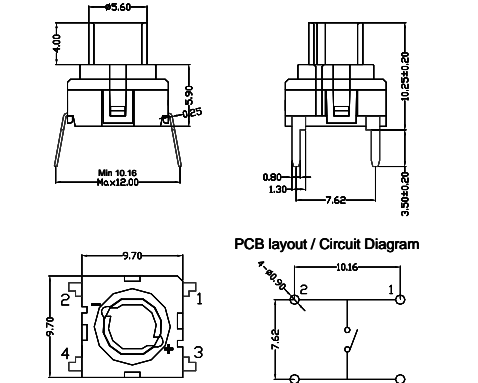
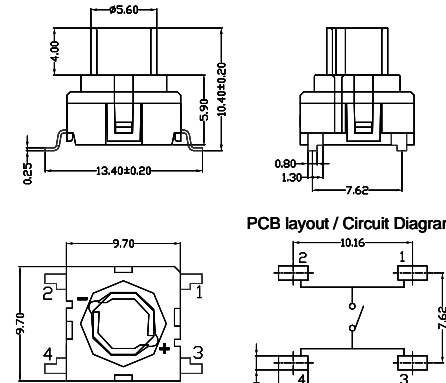
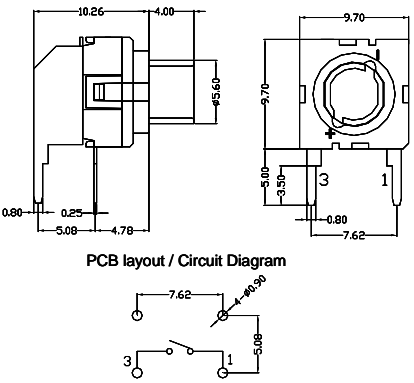


## Technical Data

Through-hole / SMD / Right angle  
 single pole / momentary  
 50mA/24VDC  
 10,000,000 operations life time (Max.)  
 Meet IP67  
 Contact resistance : 30mΩ  
 Insulation resistance : > 10MΩ  
 Basic temp.: -40/+115 °C  
 High temp.: -40/+160 °C  
 Max actuation Force : 100N for 10 Sec.  
 Push force : 4N +/- 1N

PATENTED



3CH/T	3CS	3CY
<p>Dimensions ( through-hole )</p>  <p>PCB layout / Circuit Diagram</p>	<p>Dimensions (SMD)</p>  <p>PCB layout / Circuit Diagram</p>	<p>Dimensions ( right-angle )</p>  <p>PCB layout / Circuit Diagram</p>
3FH/T	3FS	3FY
<p>Dimensions ( through-hole )</p>  <p>PCB layout / Circuit Diagram</p>	<p>Dimensions (SMD)</p>  <p>PCB layout / Circuit Diagram</p>	<p>Dimensions ( right-angle )</p>  <p>PCB layout / Circuit Diagram</p>

## How to order

**3 C**

**TM series**  
**3C**  
**3F**

### Mounting

- H** through-hole
- T** through-hole reflow
- S** surface mount
- Y** right angle

**1 D**

### CAP



### Colour codes

- 00 Blue
- 02 Green \*
- 03 Grey
- 04 Yellow \*
- 06 White
- 08 Red
- 09 Black

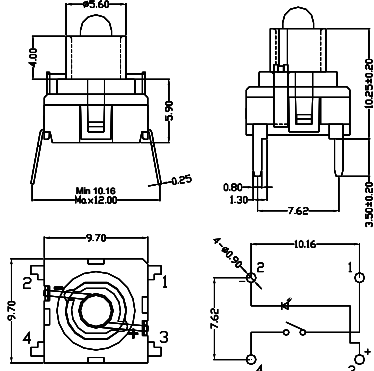
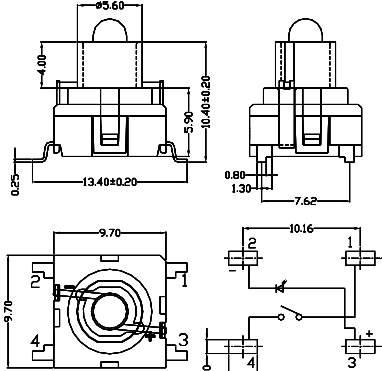
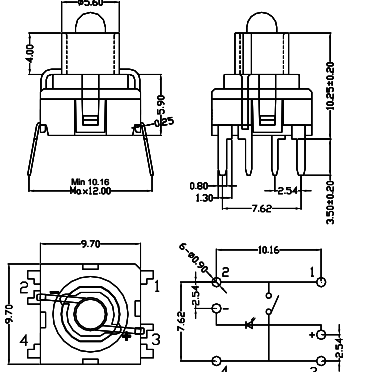
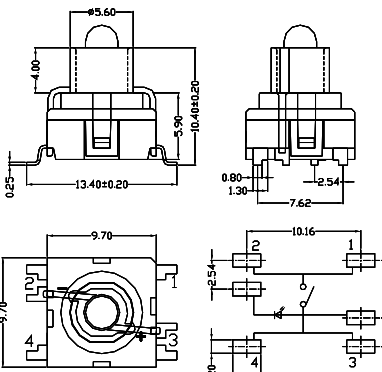
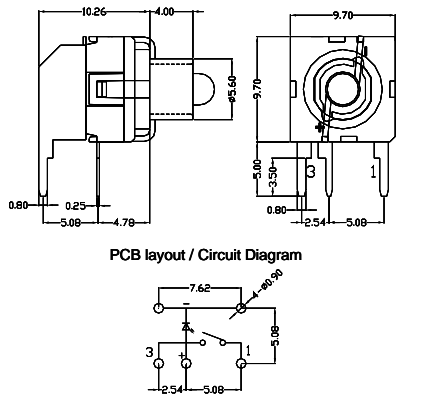
- 1 Through-hole : base & cover with Blue color
- 2 SMD : base & cover with Black color
- 3 Cover : with White color
- 4 \* CAP MOQ: 2000pcs per order  
 CAP color cross with MEC color by RAL no.

## Technical Data

**PATENTED**

Through-hole / SMD / Right angle  
 single pole / momentary  
 50mA/24VDC  
 10,000,000 operations life time (Max.)  
 Meet IP67  
 Contact resistance : 30mΩ  
 Insulation resistance : > 10MΩ  
 Basic temp.: -40/+115 °C  
 High temp.: -40/+160 °C  
 Max actuation Force : 100N for 10 Sec.  
 Push force : 4N +/-1N  
 Available With LED



4FH/T	4FS	
<p>Dimensions ( through-hole )</p> 	<p>Dimensions (SMD)</p> 	<p>Material colors :</p> <ol style="list-style-type: none"> <li>1. Through-hole : base &amp; Cover with Blue color</li> <li>2. SMD : base &amp; actuator with Black color</li> <li>3. Cover : with White color</li> </ol>
6FH/T	6FS	6FY
<p>Dimensions ( through-hole )</p> 	<p>Dimensions (SMD)</p> 	<p>Dimensions ( right-angle )</p> 

## How to order

**4 F**

**1 F**

### TM series

4F  
6F

### Mounting

H through-hole  
 T through-hole reflow  
 S surface mount  
 Y right angle

### LED colour codes

01 blue  
 21 green  
 42 yellow  
 61 white  
 82 red  
 2142 green/yellow  
 8221 red/green  
 8242 red/yellow

### CAP



### Colour codes

00 Blue  
 02 Green \*  
 03 Grey  
 04 Yellow \*  
 06 White  
 08 Red  
 09 Black

\* CAP MOQ: 2000pcs per order  
 CAP color cross with MEC color by RAL no.

## Electrical Specifications

Contact resistance	< 30m $\Omega$ - typ. 10m $\Omega$
Insulation resistance	> 10M $\Omega$
Recommended load	0.5 $\mu$ -50mA 24VDC
Contact bounce	<2mS- typically 0.5mS

## Mechanical Specifications

Standard actuation force (switch)	4.0N typ.
Max. actuation force without cap	100N for 10sec.
Key travel (switch)	1 mm
Life time (switch)	10.000.000 cycles(Max.)

## Temperature Range

Basic temperature	-40/+115 $^{\circ}$ C
Working temperature	Min. -40 $^{\circ}$ C Max. +160 $^{\circ}$ C
Storage temperature	Min. -40 $^{\circ}$ C Max. +160 $^{\circ}$ C

## Soldering IEC 68-2-20

Infrared, vapour phase, wave-soldering  
 max. 240 $^{\circ}$ C for max. 40 sec.  
 or max. 260 $^{\circ}$ C for max. 30 sec.  
 Soldering Iron- max. 350 $^{\circ}$ C for max. 3 sec. Flux tight.

## Environmental Endurance IEC 68-2-3

Temperature	+40 $^{\circ}$ C
Humidity	93% RH
Duration	21 Days

## Temperature Cycling IEC 68-2-14

Temperature limit	Min. -55 $^{\circ}$ C - Max. +85 $^{\circ}$ C
Number of cycles	200
Exposure time at each temperature	10 min
Recovery time before measurements	15 hrs.
Sealing IEC 529	meet IP-67

## Vibration Test : meet IEC 68-2-6

## Soldering

### (1)Hand Soldering

Soldering iron 30W or under at 350 $^{\circ}$ C for 3 sec max or at 270 $^{\circ}$ C for 5 sec max.

### (2)Reflow Soldering

260 $^{\circ}$ C $\pm$ 5 $^{\circ}$ C within 30 sec for reflow. In-line or Batch system.

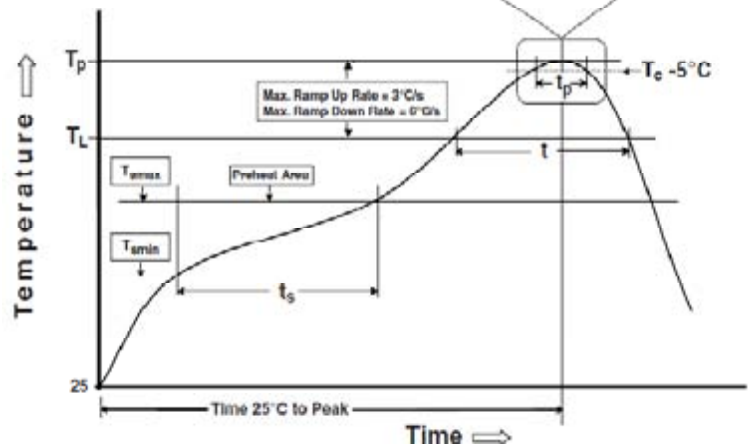
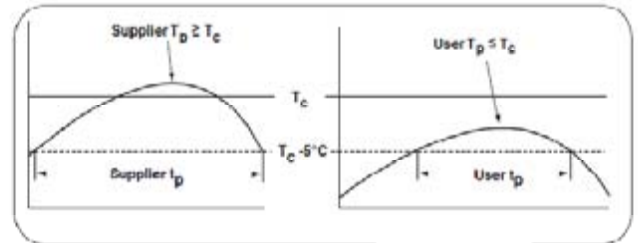
### (3)Wave soldering

For lead free wave solder simulation of typical components, the solder bath temperature Shall be maintained to 275 $^{\circ}$ C. The hold time in the solder shall be 10 +2/-0 seconds.

※ Any flux enters the switch may influence contact function .

※ All CAP un-allow pass through Soldering process.

## Reflow Soldering Standard Conditions



## Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
<b>Preheat &amp; Soak</b>	
Temperature Min ( $T_{smin}$ )	150 $^{\circ}$ C
Temperature ( $T_{smax}$ )	200 $^{\circ}$ C
Time( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60-120 seconds
Average ramp-up rate ( $T_{smax}$ to $T_p$ )	3 $^{\circ}$ C/second max.
Liquidous temperature ( $T_L$ )	217 $^{\circ}$ C
Time at liquidous ( $t_L$ )	80-150 seconds
Peak package body temperature( $T_p$ )*	For user $T_p$ must not exceed the Classification temp: 260 $^{\circ}$ C For suppliers $T_p$ must equal or exceed Classification temp: 260 $^{\circ}$ C
Time ( $t_p$ ) within 5 $^{\circ}$ C of the specified classification temperature ( $T_c$ )	30 seconds
Average ramp-down rate ( $T_p$ to $T_{smax}$ )	6 $^{\circ}$ C/second max.
Time 25 $^{\circ}$ C to Peak Temperature	8 minutes max.
*Tolerance for peak profile temperature( $T_p$ ) is defined as a supplier minimum	

Note 1: All temperatures refer to topside of the package, measured on the package body surface.

Note 2: Time within 5  $^{\circ}$ C of actual peak temperature ( $t_p$ ) specified for the reflow profiles is a "supplier" minimum and "user" maximum.